

In the Claims

Cancel claims 1-18. Examine new claims 19-39.

19. (New) An antibody binding to a *Cryptosporidium* antigen cryptopain comprising an amino acid sequence SEQ ID NO: 4 or a fragment thereof.

20. (New) The antibody of Claim 19 binding to the fragment of SEQ ID NO: 4, said fragment identified by an amino acid sequence SEQ ID NO: 5.

21. (New) The antibody of Claim 19 binding to the fragment of SEQ ID NO: 4, said fragment identified by an amino acid sequence SEQ ID NO: 6.

22. (New) The antibody of Claim 19, wherein the antibody is monoclonal or polyclonal.

23. (New) The antibody of claim 19 detecting a presence of *Cryptosporidium* by formation of an antibody-antigen complex.

24. (New) The antibody of claim 22 wherein the antibody is polyclonal.

25. (New) The antibody of claim 22 wherein the antibody is polyclonal.

26. (New) A method of treatment of *Cryptosporidium* infections comprising administering to a subject in need of such treatment an anti-*Cryptosporidium* antibody binding to a protein comprising a sequence SEQ ID NO: 4 or a fragment thereof, an anti-*Cryptosporidium* vaccine comprising a *Cryptosporidium* antigen cryptopain comprising a sequence SEQ ID NO: 4 or a fragment thereof, or a DNA or RNA vaccine comprising a DNA sequence identified as SEQ ID NO: 1 or a fragment thereof.

27. (New) The method of claim 26 comprising administration of the anti-*Cryptosporidium* antibody.

28. (New) The method of claim 26 comprising administration of anti-*Cryptosporidium* vaccine comprising the *Cryptosporidium* antigen cryptopain comprising the amino acid sequence SEQ ID NO: 4 or the fragment thereof identified by the amino acid sequence SEQ ID NO: 5 or SEQ ID NO: 6.

29. (New) The method of claim 28 wherein the vaccine comprises the amino acid sequence SEQ ID NO: 4.

30. (New) The method of claim 28 wherein the vaccine comprises the fragment identified as SEQ ID NO: 5.

31. (New) The method of claim 28 wherein the vaccine comprises the fragment identified as SEQ ID NO: 6.

32. (New) The method of claim 26 wherein the vaccine comprises the DNA sequence identified as SEQ ID NO: 1 or the fragment thereof identified as SEQ ID NO: 2 or SEQ ID NO: 3.

33. (New) The method of claim 31 wherein the vaccine comprises the DNA sequence identified as SEQ ID NO: 1.

34. (New) The method of claim 31 wherein the vaccine comprises the DNA fragment identified as SEQ ID NO: 2.

35. (New) The method of claim 31 wherein the vaccine comprises the DNA fragment identified as SEQ ID NO: 3.

36. (New) A method of diagnosing *Cryptosporidium* infection, comprising steps:

(a) contacting a sample of a body specimen, fluid or tissue obtained from a subject, with an anti-*Cryptosporidium*